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A checklist of the Brazilian gasteroid fungi (*Basidiomycota*)

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Abstract — Based on the available literature, a list of 232 gasteroid species recorded from Brazil since the earliest known collection is presented. These species are distributed among 54 genera and 16 families (plus incertae sedis). *Morganella fuliginea*, *Calvatia cyathiformis*, *Geastrum saccatum*, *Scleroderma albidum,* and *S. verrucosum* are the species with widest distribution in Brazil. Rio Grande do Sul is the State with the largest recorded gasteroid mycota. The complete checklist is available on http://www.mycotaxon.com/resources/weblists.html.

Key words — gasteromycetes, mycodiversity, Brazilian fungi

Introduction

Brazilian mycota studies started in 19th century with European naturalists' interest. Many foreign travelers were collectors and sent materials to scientists in different countries in Europe who identified the specimens (Fidalgo 1968).

Concerning the gasteromycetes, the first collection from Brazil was a *Clathrus* specimen gathered in 1826 by William John Burchell (Fidalgo 1974). Other foreigners who contributed to gasteroid fungi knowledge in the country were: Berkeley (Berkeley 1842, Berkeley & Cooke 1876), Möller (1895), Hennings (1902, 1904a, b, c), Lloyd (1906a, b, c, d, 1907a, b, c), Sydow & Sydow (1907), Patouillard (1907), and Rick (1930, 1961).

It was about the middle of the twentieth century that some Brazilian scientists began working with gasteroid fungi taxonomy (Silveira 1943, Batista 1950, Batista & Vital 1955, 1957, Batista & Bezerra 1960), but only at the beginning of the new millennium that detailed studies concerning the group started (Baseia & Milanez 2000, 2001a, b, 2002a, b, c, 2003a, b).

Gasteroid fungi present a wide range of basidiomata structure and these distinctive life forms led to the designation of many genera represented by only one or a few species. Currently, approximately a hundred genera of gasteromycetes are accepted (Dring 1973, Miller & Miller 1988).

The main objective of this article is to compile data about Brazilian gasteroid fungi and present a list of species.

Material and methods

This checklist is based on intensive search of literature records of gasteroid fungi recorded from Brazil. Nomenclature and author names follow Index Fungorum (IFS—http://www.indexfungorum.org/Names/Names.asp) and the International Plant Names Index (IPNI—http:// www.ipni.org). Genera and species are listed alphabetically inside each family according to Kirk et al. (2008). Genera with taxonomic positions not well established are designated as 'incertae sedis'. Names not found on the IFS database are marked with *. This checklist includes only records that were identified to the species level.

Although this compiled list has been reviewed carefully, minor errors can occur. We plan to regularly update the internet version of the checklist, so we gratefully encourage any remarks concerning errors or omitted data.

Results

The 232 gasteroid fungi species recorded from Brazil are distributed among 54 genera and 16 families. The most highly represented family is *Agaricaceae* with 104 species (44.8 %), followed by *Geastraceae* and *Phallaceae* (with 44 and 38 species, respectively). *Geastrum* is the genus with the highest number of species, with 40 taxa (17.2 %).

The species with widest Brazilian distribution are *Morganella fuliginea* (Berk. & M.A. Curtis) Kreisel & Dring (recorded from 7 States), followed by *Calvatia cyathiformis* (Bosc) Morgan, *Geastrum saccatum* Fr., *Scleroderma albidum* Pat. & Trab. and *S. verrucosum* (Bull.) Pers. (6 States). Rio Grande do Sul is the State with the greatest number of gasteroid mycota recorded (133 taxa/57.3 %), especially due to the great contribution of Father Johannes Rick.

If there are approximately a hundred genera of gasteromycetes (Dring 1973, Miller & Miller 1988), the diversity of this group is still not well represented in Brazil, since only 54 genera are recorded in the literature.

The complete checklist of the Brazilian gasteroid fungi is available on http://www.mycotaxon.com/resources/weblists.html.

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Literature cited

Baseia IG, Milanez AI. 2000. First record of *Scleroderma polyrhizum* Pers. (*Gasteromycetes*) from Brazil. Acta Bot. Brasil.14(2): 181–184.

Baseia IG, Milanez AI. 2001a. *Crucibulum laeve* (Huds.) Kambly in cerrado vegetation of São Paulo State, Brazil. Acta Bot. Brasil. 15(1): 13–16.

Baseia IG, Milanez AI. 2001b. *Nidularia pulvinata* (Schwein.) Fr. (*Gasteromycetes*): a new record from Brazil. Revista Brasil. Bot. 24(4): 479–481.

Baseia IG, Milanez AI. 2002a. *Tulostoma* (*Gasteromycetes*) from the cerrado region, State of São Paulo, Brazil. Acta Bot. Brasil. 16(1): 9–14.

Baseia IG, Milanez AI. 2002b. *Rhizopogon* (*Gasteromycetes*): hypogeous fungi in exotic forests from the State of São Paulo, Brazil. Acta Bot. Brasil. 16(1): 55–60.

Baseia IG, Milanez AI. 2002c. *Montagnea haussknechtii* (*Podaxales*) a rare agaricoid fungus: first record from Brazil. Acta Bot. Brasil. 16(3): 311–315.

Baseia IG, Milanez AI. 2003a. *Cyathus* (*Gasteromycetes*) in areas of the Brazilian cerrado region, São Paulo State. Mycotaxon 80: 493–502.

Baseia IG, Milanez AI. 2003b. *Geastrum setiferum* (*Gasteromycetes*): a new species with a setose endoperidium. Mycotaxon 84: 135–140.

Batista AC. 1950. Três novos *Podaxis* de Pernambuco. Bol. Agric. Pernambuco 17(3–4): 320–324.

Batista AC, Bezerra JL. 1960. *Basidiomycetes* vulgares em o Nordeste Brasileiro. Publicação do Instituto de Micologia 294: 1–30.

Batista AC, Vital AF. 1955. Novos fungos do gênero *Tylostoma*. Anais Soc. Biol. Pernambuco 13 (1): 125–150.

Batista AC, Vital AF. 1957. Um novo gasteromiceto da família *Mesophelliaceae*. Anais Soc. Biol. Pernambuco 15(1): 13–18.

Berkeley MJ. 1842. Notice of some fungi collected by C. Darwin Esq. in South America and the Islands of the Pacific. Mag. Nat. Hist. 9(60): 443–448.

Berkeley MJ, Cooke MC. 1876. The fungi of Brazil, including those collected by J.W.H. Trail, Esq. M.A. in 1874. J. Linn. Soc., Bot. 15: 363–398.

Dring DM. 1973. Gasteromycetes. In: Ainsworth GC, Sparrow FK, Sussman AS (eds). The fungi. An advanced treatise. vol. IVB. Academic Press, New York and London, pp. 451–478.

Fidalgo O. 1968. Introdução à história da micologia brasileira. Rickia 3:1–44.

Fidalgo O. 1974. Adições à história da micologia brasileira. II. Fungos coletados por William John Burchell. Rickia 6: 1–8.

Hennings P. 1902. Fungi S. Paulenses II a cl. Puttemans collecti. Hedwigia 41: 295–311.

Hennings P. l904a. Fungi fluminenses a cl. E. Ule collecti. Hedwigia 43: 78–95.

Hennings P. 1904b. Fungi amazonici a. cl. Ernesto Ule collecti: 1. Hedwigia 43: 154–186.

Hennings P. 1904c. Fungi S. Paulenses III a cl. Puttemans collecti. Hedwigia 43: 208–209.

Kirk PM, Cannon PF, Minter DW, Stalpers JA. 2008. Dictionary of the fungi. 10th Edition. CAB International, Wallingford. 771 pp.

Lloyd CG. 1906a. Mycological Notes nº 21. The genus *Arachnion*. Mycol. Writings 2: 252–254.

Lloyd CG. 1906b. Mycological Notes nº 24. Concerning the phalloids. Mycol. Writings 2: 293–298.

Lloyd CG. 1906c. The *Tylostomeae*. Cincinnati. 28 pp.

Lloyd CG. 1906d. The *Nidulariaceae* or "Bird´s-nest fungi". Cincinnati. 32 pp.

Lloyd CG. 1907a. Mycological Notes nº 25. New notes on the geasters. Mycol. Writings 2: 309–317.

Lloyd CG. 1907b. Mycological Notes nº 26. Concerning the phalloids. Mycol. Writings 2: 325–337.

Lloyd CG. 1907c. Mycological Notes nº 28. Concerning the phalloids. Mycol. Writings 2: 349–364.

Möller A. 1895. Brasilische Pilzblumen. Bot. Mitt. Tropen 7: 1–152.

Miller OK, Miller HH. 1988. Gasteromycetes: morphology and developmental features. Mad River, Eureka, CA. 157 pp.

Patouillard N. 1907. Basidiomycètes nouveaux du Brésil recueillis par F. Noack. Ann. Mycol. 5(4): 364–366.

Rick J. 1930. Lycoperdineas Riograndensis. Egatea 15: 19–30

Rick J. 1961. *Basidiomycetes* Eubasidii no Rio Grande do Sul. Brasília. Iheringia 9: 451–480.

Sampaio AJ. 1916. A flora de Mato Grosso. Arch. Mus. Nac. 19: 1–126.

Silveira VD. 1943. O gênero *Calvatia* no Brasil. Rodriguésia 7: 63–80.

Sydow H, Sydow P. 1907. Verzeichnis der von Herrn F. Noack in Brasilien gesammelten Pilze. Ann. Mycol. 5(4): 348–363.